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A graph for Kleinian groups

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Introduction.

A finitely generated Kleinian group G has some special kind of subgroups. They are, for example, component subgroups, web and nest subgroups. By means of those subgroups we shall construct a graph on which G acts without inversion. This is down by a special choice of the vertex set. An edge is a separator of web type, that is a separator which lies on the boundary of only one component of G. The extremities of an edge are different ones, one is associated with components and the other is a web. This would imply G acts without inversion.

The most part of this article is devoted to construct the vertices and to determine their stabilizers, which are associated with components. Here we outline the idea of this procedure. To each component Δ of G we associate a set $\mathcal{L}(\Delta)$ which consists of components of G linked by separators of nest type to Δ. A separator is of nest type if it lies on the boundaries of two components of G. The linkage means a sequence of components interleaved with separators of nest type. Then we show that the stability subgroup of $\mathcal{L}(\Delta)$ in G is either a component subgroup or a nest subgroup. This is in Section 3 following the preliminary Sections 1 and 2. The construction of the graph is in Section 4.

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1. Known results and residual limit points.

Let G be a finitely generated Kleinian group and denote by $\Omega(G)$ and $\Lambda(G)$ the region of discontinuity and the limit set of G, respectively. A component of $\Omega(G)$ is called a component of G. Let Δ be a component of G and denote by G_Δ the stabilizer of Δ in G, that is, $G_\Delta=\{g\in G \mid g(\Delta)=\Delta\}$. It is well known that G_Δ is a finitely generated function group having Δ as an invariant component and is called a component subgroup of Δ. Assuming $\Omega(G_\Delta)\neq\Delta$, let Δ^* be a component of G_Δ different from Δ. Then the boundary $\partial\Delta^*$ of Δ^* is a quasiconformal image of a circle and is called a separator for G. We denote by $S(G)$